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SUBJECT

GROUNWATER/VADOSE ZONE INTEGRATION PROJECT - REGULATORY PATH FORWARD WORK GROUP - September 11, 2000

TO

Distribution

FROM

Moses Jarayssi

DATE

October 30, 2000

ATTENDEES

See Attendees List

DISTRIBUTION

Attendee List D.H. Butler H0-21

Document and Information Services H0-09

Meeting Date and Location:

A meeting on the above subject was held on September 11, 2000, at 3350 George Washington Way, Richland, Washington, Bechtel Hanford, Inc., Assembly Room.

Introductions:

Moses Jarayssi, BHI

- Workshop purpose: Provide a forum for DOE, Regulators, Stakeholders, and Tribal Nations to discuss values, requirements, overriding issues, and gaps related to achieving cleanup end-points on the Hanford Site.
- Workshops design: For each waste group in each geographic area two workshops are held: regulatory and stakeholders workshops. The outcomes of all the workshops for each geographic area are captured in a regulatory path forward report.
- Major Outcomes of Previous 200 Area Workshop: (see attached DECISION TIMING/SCHEDULE)
 - New Tank Waste Retrieval Approach
 - ▼ DOE needs to get the stakeholders and tribal nations on board with new 200 Area vision
 - Land-use issue needs to be agreed to and settled
 - Cleanup standards need to be set within the next five years
 - The site needs to show progress in the near future to maintain support
 - Changes due to new vision still being evaluated by DOE programs.

Presentations:

This workshop regarding the 200 Area Source Units was started with the following presentations (see attached agenda):

Presentation: 200 Area Land Disposal and Retrieval – (Rudy Guercia, DOE)

➤ Low-level radioactive wastes (LLW), Mixed low-level wastes (MLLW), De-fueled Naval reactor compartments.

Presentation: ILAW Disposal – (Fred Mann, CHG)

➤ The need for ILAW disposal facility. It is part of the corrective action for tanks. Waste from 177 underground tanks will be retrieved. DOE Order 435.1 states "reasonable expectation" that disposal action protects the environment and the public. The 2001 ILAW PA contains both radiological and chemical objectives. A draft of the 2001 ILAW PA is expected in December for internal review and published by March 2001.

Presentation: Soil Characterization – (Bruce Ford/Curt Wittreich, ERC)

- ➤ 200 Area Operable Units Characterize and cleanup 200 Area contaminated soil sites. There are approximately 800 waste sites organized into 23 process-based operable units. This excludes tank farms and buildings/facilities.
- ➤ The current baseline shows 23 process-based operable units in nine major waste categories. The alternative baseline shows 12 operable units that are selected to address greatest risk waste sites and support remedial decisions.

Presentation: Tank Waste Retrieval and Tank Farm Closure – (*Tony Knepp, CHG/Bob Lober, DOE*)

- ➤ The mission of the single-shell tank (SST) waste retrieval program is to retrieve waste from SSTs in a safe, economical manner. Transfer the waste to designated facilities and transition the tanks for closure. The program must meet the Tri-party agreement commitments and provide feed for the River Protection Program tank waste immobilization facilities.
- ➤ The Tank Farm Vadose Zone Scope is to develop and implement a RCRA field investigation and corrective measures program. Characterize and evaluate the implications of tank wastes released into the environment to support ORP/RPP and other site mission needs. Integrate environmental data needs for tank waste retrieval and closure work as part of the Hanford Groundwater/Vadose Zone Integration Project to provide the information needed to support decisions.
- > RCRA Investigations and Analysis Process is to collect and analyze previous data. Decide on the need and priority for additional data. Integrate the old and new data, examine remediation options then make recommendations and produce a facility investigation report.

Presentation: 200 Area Strategic Planning – (Tom Wintczak, BHI)

➤ The key point in the RL schedule options study is to complete cleanup of the River Corridor by 2012, meet the basic needs, and achieve meaningful progress on the Central Plateau, all within a reasonable budget assumptions. The objective of study is to develop options for re-baselining RL work consistent with new outcomes approach and regulatory considerations.

➤ The current baseline is an unrealistic; funding profile and the technical logic and cost estimates need revising. The need for executable plan to give regulators and stakeholders an approach that delivers desirable results in the near future within reasonable funding assumptions.

<u>Presentation: Stewardship Planning – (Pam Brown, HAB, City of Richland)</u>

- Two Key Challenges
 - Identifying the key stewardship needs at closure, and
 - Identifying the role of stewardship in shaping cleanup remedy selection
- Cleanup decisions are currently being made and remedies selected that do not account for stewardship needs
 - Examples included trench cleanups and solar pond remediation
 - Who is making these decisions? Different organizations are involved.
 - Who will be keeping the records, cost of upkeep, and
 - Who will have access to this information?

Regulator Perspective

The regulators were invited to talk about their reactions towards the information provided in the presentations:

➤ John Price, Department of Ecology:

- Land Use drive the decisions for longer term.
- We need to fully understand the Hanford Eco System throughout the Hanford Area.
- We need to make sure to address all media and all pathways of contaminants of concern.
- All data and resources need to be looked at very carefully.
- Definite input from stakeholders is valuable to us.

Doug Sherwood, *EPA*, *Richland Office*:

- DOE Head Quarters (DOE-HQ) and the President's Budget must support the new vision with the additional 10% funding before we can make any serious changes to the plan.
- In re-negotiating the existing milestones to support the new vision, is DOE-HQ going to reject the setting of enforceable milestones? This is a huge concern.
- As for the redevelopment of the 300 Area; have we considered the contaminated infrastructure, and the possible need to re-sequence the remedial work?

> Dennis Faulk, EPA, Richland Office:

- 200 Area still fuzzy. Not a lot of certainty. We want to protect the environmental issues.
- We need to create an environmentally protective waste management system in the 200 Area.
- We need to be very careful with deferral of activities in the 200 Areas.
- It is very dangerous to be shortsighted in dealing with the 200 Area issues.
- There are near-term problems on the 200 area that need our attention.
- Carbon Tetrachloride (CCl-4) and Uranium are still big problems. We are not done tackling such near term problems yet.
- We need to evaluate our options for modified barriers that suit Hanford and meet RCRA requirements.
- We need to take aggressive action and continue our characterization efforts.
- Treatability tests in the near future may be beneficial.

- Canyon initiative is still under consideration.
- It may be time to re-prioritize the waste sites for characterization and future remediation
- The question is "Can we set near term compliance criteria?"
- Integration between the regulators, stakeholder, DOE and Contractors needs to be improved.

➤ Dib Goswami, *Ecology*

- The characterization of 200 Areas is critical.
- The regulators are still considering the new vision
- Input of stakeholders and tribal nations is very important as we format our positions
- We need to establish points of compliance and lists of Contaminants of Concern to support tank farm closure.

▶ Dick Heggen, *Ecology*

- Without significant retrieval there is no point discussing end-points
- It is too early to set standards now, we need to get more data from characterization to establish those
- Complete removal of tanks is still an option to be considered.

Focused Discussions

In an attempt to focus the discussion, the group was given the following two questions to think of and respond to:

- What are the major issues and concerts to consider while planning for the next 10 years in the 200 Areas?
- What steps do you recommend for DOE to take to deal with these issues?

> Shelley Cimon, HAB, Oregon

- Setting of compliance standards is still not clear or sure.
- We need to understand and figure out how much characterization we need.
- Is leaving tanks in place one of the options we are considering? Do we know what the final disposition of the tanks is going to be?
- We need to understand the process we need to adopt to deal with the emerging issues.
- We need to hear more about what goes on between the regulatory agencies.
- Interim results, goals, and standards are critical in this phase.
- We need to balance our plans between risks in the 200 Area and acceleration of work along the River Corridor.

➤ Joe Cruz, *ORP*, *DOE*:

- A standards goal needs to be set soon. This goal will assist us in making near and long-term decisions

➢ Gordon Rogers, *HAB*, *Tri-Cities*:

- We need a firm set of points of compliance and cleanup standards.
- Why is it hard to change cleanup standards once we've set them? If we feel that they are the wrong points of compliance in the future, and we are unable to meet them, we'll change them then. We've done that on many other occasions.

> Dirk Dunning, HAB, Oregon

- Desirable outlooks: realistic characterization what is the potential of waste contamination from groundwater?
- We need to know and understand the sources of contaminants.
- Tank Closure we need to evaluate and recognize the risk to groundwater during pulling of the tanks. New technologies should be evaluated and utilized.
- Our present knowledge is poor. Do we have the capability of recognizing what is known and what is not? Most likely we will have no control in 100-200 years from now over the Hanford Area.
- In reference to the "tanks" presentation, if more double shell tank capacity is needed, go with smaller capacity tanks.
- What is new with the PFP accelerated strategy?
- What does "Waste Management" mean for the 200 Area?
- Still opposed to the Canyon Disposition Initiative. Those structures are not capable of taking all the loads being designed. Engineering studies done so far are insufficient to convince me otherwise.

> Pam Brown, City of Richland, HAB

- We need to go on with the Canyon Initiative
- It may be impossible to get an additional \$500 million to support this vision
- Technology gaps are still a major issue.
- The process used during the M-33 milestone negotiations is a very good model to use to discuss this new vision.

Miscellaneous Discussion Points from Attendees:

- ➤ Gordon Rogers Get the Vit Plant built and running
- ➤ **Leon Swenson** Trade off between risk of the river corridor, why are there so many resources going to the river when we have others that are much higher risk than that of the river corridor? The 100 Area is being released due to pressure from congress. Do we not need to look at the large items rather than the small items? What is the trade?
- ➤ **Dirk Dunning** It is a site management decision, they must not interfere with the immediate issues.
- ➤ Shelley Cimon This is a PR plan; it does not look at urgent risk. Time is against us.
- Fred Mann how do we establish what risk is? We need to look at the risk among various systems. We need to agree on what risk is to be able to make further decisions.
- ➤ Shelley Cimon How do we quantify risk? We need to get outside of the box of 50, 60, 70 years.
- **Fred Mann** We need to come to conclusion together and then reach for the course of action.
- ➤ Mike Thompson Main goal keep the stuff out of the Columbia River. Do a mobile sweep of Strontium and Cesium. Klien's vision is a good one; we need to stabilize the 200 area. What can be done in the near future of the 200 area? Need to do characterization on carbon tet. The tank farms, we need to understand contaminates that drive the risk. Communication is the key.
- > Shelley Cimon there is an assumption that we will actually be "Done in a Decade" what does that mean?
- ➤ **Mike Thompson** It means that the site has been collapsed to waste site management system in the 200 Area. All decisions are done, however the activities continue.
- > Stan Sobezyk What is waste management?
- ➤ Mike Thompson It means that within 10 years we will be able to manage waste, treatment, and storage in the 200 Area. 200 Areas is far different than that of other areas.
- ➤ **Pam Brown** We are going to lose our place in the WIPP queue with TRU. What is going to happen if we are asked to tear down the canyons?

- ➤ **Doug Sherwood** Remote handled TRU, impossible to fully fund with the Vit in the hopper first. No technologies are identified for RH TRU waste. Remote TRU streams, SNF readily available on some streams has validity and is big. Without the technology and a plan we will get slammed. Much need for ongoing discussions on risk.
- ➤ **Dirk Dunning** If we use the canyons for waste, they will collapse. I would like to talk with the engineer who will put their stamp on the canyon initiative. Knock them down and bury them.
- Fred Mann Integrity of concrete is not insured past 100 years.
- ➤ **Dennis Faulk** One of the many alternatives is not to fill the canyons, there are many alternatives that have not been brought forward today.
- > Stan Sobezyk Asked Beth Bilson, "is the ER program considering the 200 area as a low priority?"
- ➤ **Beth** in general, we have to do some prioritization, however there are selected areas that are not on the lower end of the priority list. So not everything in the 200 Area is low priority.
- ➤ **Doug Sherwood** Recognized that ER sites are a low priority. We have deferred a lot out past the 200 area. We are undergoing alot of slowing down. Is it just the ER part to slow down or is it all? Firm milestones for ER not PFP, Tank Farms, etc. It's all going slow.
- ➤ **Dirk Dunning** We know a lot about the site, however we do not know what we should know.
- ➤ **Shelley Cimon** There has to be a process. Piece-mailing the Hanford Site is not efficient. We do not hear from the dialog from the stakeholder and regulators. The process really needs work. DOE needs to address this issue of the agencies coming before the board with their ideas and issue solutions so we are all on the same page.

Responses to Questions:

The attendees responses to the two questions listed above have been listed the attached table. Some of the attendees chose not to write their names on their input sheets. Those have been referred to in numbers.

Attendees:

B. Bilson (DOE) H0-12

B. Becker-Khaleel (Ecology)

C. Brewster (BHI) H0-19

P. Brown (City of Richland)

S. Cimon (HAB)

C. DeFigh-Price (CHG) T4-08

P. Doctor (BHI) H0-23

E. Dresel (PNNL) K6-96

D. Dunning (State of Oregon)

D. Faulk (EPA)

B. Ford (BHI) H0-19

J. Fruchter (PNNL) K6-96

D. Goswami (Ecology)

R. Guercia (DOE) H0-12

J. Hebdon (CHG) R1-51

D. Heggen (Ecology)

D. Jaquish (WDOH)

M. Jarayssi (BHI) H0-19

R. Landon (BHI) H0-02

T. Lee (CHI) H9-02

S. Luttrell (PNNL) K6-96

F. Mann (FDNW) H0-22

N. Myers (BHI) H0-14

D. Nichols (JEG)

J. Price (Ecology)

G. Rogers (HAB)

D. Simpson (HAB)

S. Sobezyk (NPT)

C. Swanson (CHI) H9-02

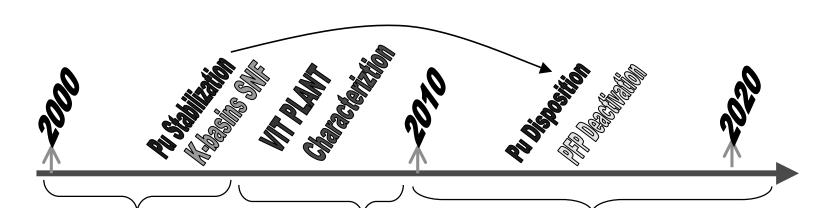
L. Swenson (HAB)

M. Thompson (DOE) A5-13

J. Waite (FH) B3-53

D. Willis (DOE) A1-61

Decision Timing/Sequence:



- •Land-use
- •Cleanup Standards
- •CDI
- •Use of T Plant for Waste
- •Retrieval & Closure of Single Shell Tanks
- Additional
- **Vitrification Capacity**
- Soil Remediation

- •Single Shell Tank Closure
- LLBG Closure
- •Mixed Waste Trenches Closure
- Soil Remediation

~ ~ Agenda ~ ~

200 Area Source Units Regulatory Path Forward

 Introduction & Agenda Overview: Introduction of attendees Overview of the agenda and activities Ground Rules 	Dee Willis	10 min	9:30 AM	9:40 AM
 Workshop Objectives: Process overview Outcomes from 200 Area Regulatory Workshop 	Moses Jarayssi	15 min	9:40 AM	9:55 AM
 Presentation #1: 200 Area Land Disposal & Retrieval Low Level Burial Grounds Mixed Waste Trenches Transuranic Waste Retrieval ILAW disposal trenches 	Rudy Guercia/ Fred Mann	30 min	9:55AM	10:25 AM
Presentation #2: Soil Characterization: 200 Area Operable Units TPA Milestones	Curt Wittreich	15 min	10:25 AM	10:40 AM
Break		15 min	10:40 AM	10:55 AM
Presentation #3: Tank Farms: Characterization Efforts Tank Waste Retrieval Tank Closure	Tony Knepp Bob Lober	45 min	10:55 AM	11:40 AM
Presentation #4: 200 Area Strategic Planning	Tom Wintczak	20 min	11:40 AM	12:00AM
Lunch Break			12:00 PM	12:30 PM
Stewardship Planning: Overview of recent developments within DOE complex on Stewardship Planning.	Pam Brown (City of Richland/HAB)	20 min	12:30 PM	12:50 PM
Regulator Perspective: What are "Must Do" activities? Regulatory vision	EPA Ecology Health F&WL	40 min	12:50 PM	1:30PM
Focused Discussion The attendees will be asked to focus on and respond to a set of questions that relate to their values in regards to the planning of the 200 Areas activities.	All	60 min	1:30 PM	2:30 PM
Break		10 min	2:30 PM	2:40 PM
Final Recommendations to DOE & Regulators: Stakeholders and Tribal Nations will be asked to provide their recommendations to DOE and the regulators.		50 min	2:40 PM	3:30 PM

	QUESTIONS			
Name	1. What are the major issues and concerns to consider while planning for the next 10 years in the 200 Areas?	2. What steps do you recommend for DOE to take to deal with these issues?		
	AN	SWERS		
Gordon Rogers	 Get the Vit Plant built and operating Prioritize sites and programs using risk Get PFP finished and stabilized Continue a planning effort to find ways to do a better job 	 Keep trying with congress and OMB Continue what has been started recently Stay the course Keep trying and studying 		
Leon Swenson	 What are the real high risk issues (as contrasted to the issues that are regulatory driven issues) where high risk considers the workers, the local population, and the ecological concerns? What is the tradeoff between risks mitigated along the river corridor and risks not mitigated (assuming funding limitations) in the 200 area? 	 Focus on quantifying risk tradeoffs between river corridor and 200 Area Continue characterization efforts as risks can be quantified Work with EPA and Ecology to assure that those efforts driven by regulatory requirements really reduce risk and make sense, and work to change those that do not make sense. 		
Dan Simpson	 Safety of interim stabilized S&T waste Definition of central plateau cleanup/transition end state Criteria for permanent disposal of SST's with residual waste 	 Define end state as a licensed/authorized waste management site for permanent disposal Continue/expand performance assessment technology to answer issues Recognize time horizon is forever 		
Jack Waite	 Focus on better understanding of the impact of the plateau on the environment and ensure further degradation is minimized Reduce the mortgage and associated risks to make \$ available quicker Need to look for ways to save dollars 	 Keep K-Basins and PFP on schedule or accelerate Concentrate on characterize the most significant issues on the plateau Maximize use of existing? (e.g., canyons) for storage, disposal or treatment 		
Attendee	 Potential land use Hanford Nat'l Management FACA Establish GW point of compliance Deal with long term surveillance and maintenance issues 	 Get Benton County to issue their Hanford Unit Land Use Plan Refer to TWRS, HCP and ERDA 1538 EIS, RODs and Clinton's monument letter and monument 		

	QUESTIONS			
Name	1. What are the major issues and concerns to consider while planning for the next 10 years in the 200 Areas?	2. What steps do you recommend for DOE to take to deal with these issues?		
	Establish expected GW flow patterns and rates	 proclamation for organics, look for degradation products downstream to establish decay rates for CC_L4 and TCE. Fund CDI, S&M facility repair EE/CA's for miscellaneous cleanups Stabilize flow inputs and outputs to establish rates 		
Attendee	 Getting consensus on end state issues Obtaining the funding to complete cleanup in a timely manner 	 Need cost saving break though; revisit past decisions based on today's knowledge to see if they still make sense (i.e., glassifying LLW) Look at the 200 area as a whole area prioritizing activities and establishing end points 		
Attendee	 Characterization of TSDs/waste sites Technologies on remediation GW Vitrification Establish cleanup levels/goals for soil Address site use scenario, ore discussion on TWS issue 	 More funding for characterization Demonstrate and deploy innovative technology 		
Evan Dresel	 Prioritization of waste sites Role of ongoing monitoring in decision process Continued development of conceptual models/understanding of contaminant chemistry and transport book of surprises Evaluating impacts during remediation (addition of water contaminant remobilization 	 Continued characterization look at maintenance cost e.g., RCRA wells are expensive Interim compliance points/limits clear definition of monitoring goals/needs/responsibility Ongoing S&T research from basic to focused Integration/communication between projects 		
Dirk Dunning	 There is more that we collectively do not know than the we do. This includes knowledge of the wastes, the geophysical and hydrology environment, waste properties, etc. Current thinking ignores this state of ignorance and proceeds to attempt to make final decisions based on a vast array of understated and undo commented assumptions and desires and presumed answers. 	 Begin immediately to document and strongly challenge (\$ prove or disprove) the assumptions embedded in current thinking. Until management understands how poor the basis for decisions is good decision begins to be possible Begin immediately to incorporate what is known about horizontal transport of waste and water in the vadose zone. This will necessitate discarding the 		

	QUESTIONS			
w	1. What are the major issues and concerns to consider while planning for the next 10 years in the 200 Areas?	2. What steps do you recommend for DOE to take to deal with these issues?		
	 Given the current lack of thorough knowledge all we can reasonably do is to proceed with interim actions to remedy the severe problems with urgent work to verify waste and stabilize spent fuel Give up on predetermined decisions like the canyon disposition initiative and presumptive remedies such as caps. Current knowledge shows they will likely not work as planned 	 current models and starting over. Failing this, it will have to happen later at higher cost. Do focus efforts on characterization and exploratory methods of waste remediation similar to what was done in the 100 area. 		
Mike Thompson	 To stabilize the 200 areas: CCL-4, SST Leaks/retrieval, vadose zone monitoring, alternative cover designs, focu on risk producing RAD and chemicals, reduce infiltration and water leaks at sites. 	 Characterization and remedial action upgrades Characterization/S&T to understand transport of risk producing radionuclides and chemical Systems to understand flux of water and contaminants in the soils – safety net for decisions Long lead testing required (Tc, Ur, I-129, Cr6,a nd C14) 		
Shelley Cimon	 Time is against us Adequate characterization of plumes Quantifying their (plume) mobility over time physics tells us we lose the ability to gather them back as they disseminate Set points of compliance, we need them to get on with it Trade offs and budget limitation, how real are they VIT Plant built 	 Allocate \$, to address characterization and \$&T needs Admit done in a decade, is a false assumption Stakeholders need to hear about the regulator and DOE negotiations 		
Attendee	 Stop plumes headed for the river Establish plan for canyon initiative 3000 spent fuel sludge barrels to WIPP Technology needs – retrieval and treatment 			
Moses Jarayssi	 Showing progress in near term Must deal with uncertainly of funding We must have a technical baseline to spring forward No cumulative risk assessment tools available yet 	 While planning for long term activities, push easy project through Characterization 		

Name	QUESTIONS			
	1. What are the major issues and concerns to consider while planning for the next 10 years in the 200 Areas?	2. What steps do you recommend for DOE to take to deal with these issues?		
Attendee	 Tank stabilization, then remove Determining which outlayers will be included with in the waste management area Decision on CDI, then move forward to save waste disposal on the plateau 	 Double shell tanks for interim, vit plant; us new technologies for the long term Make recommendations as sound science through characterization on what is in and what is out Get on with results of study and path forward to the public for input 		
Attendee	 Develop an environmentally protective waste management infrastructure to deal with Hanford contaminants (tank treatment, barriers, etc.) Deal forcefully with near term problems 			
Stan Sobczyk	 Lack of characterization data for the vadose zone implies that the risk due to the waste sites is unknown ER program considers remediation of the 200 Area a low priority Vit plant status 	 Characterize all of the waste sites, not just the perceived high-risk sites. Increase funding for 200 area remediation and characterization Cost plus contracting is the only path forward 		
Richard Heggen	 SST retrieval and treatment (this is the one factor that achieves significant risk reduction and the fastest) Sufficient characterize the SST tank farm release Ramp up technology development and deployment for SST retrieval and settle on the best alternative Since institutional controls and future use plans provide no guarantees we must clean up to the maximum extent possible within reasonable funding constraints TRU waste time factor could be wasted opportunity. We need better explanation of this issue. EPA Sherwood had good comments. 	 Bring the treatment plants on line ASAP Continue with current programs and work cooperatively with Ecology and EPA Re-activate the STCG subs group and push DOE HQ to provide Hanford more benefits from this than in the past Cooperate with TPA and regulators and communicate better 		
Cherri DeFigh- Price	 Letting uncertainties be an excuse for not proceeding with cleanup Un-realistic cleanup goals standards, which make 	 Focus on actions (physical we can go ahead w or w/o precluding future cleanup Set interim goals to significantly reduce real risk 		

Name	QUESTIONS			
	1.	What are the major issues and concerns to consider while planning for the next 10 years in the 200 Areas?	2.	What steps do you recommend for DOE to take to deal with these issues?
		closure so costly, nothing occurs		(not perceived risk)
	-	Funding uncertainty	•	Set real, visible cleanup options best way to keep \$ coming
Attendee	-	Prioritize risk, politics, when do we put our \$ where are mouth is	•	Better comparison between larger parts of program, priorities in chunks
	•	Interim goals, must establish interim request and process to modify them to enable cleanup	•	DOE must initiate open honest dialogue with regulators and stakeholder about what can and
	•	Focus on results, we study more than we cleanup. This		should be done
		does not build the skills and knowledge to actually clean	•	Emphasize demos and interim actions over pencil
		the site.		whipping.
Tony Knepp	•	Stay the course	•	Focus, focus
	•	Emphasize remediation	•	Do not be something to everyone
	•	Tank retrieval of waste is the 1, 2, 3 priority	•	Get the work out on risk of Hanford to the local area
Fred Mann	•	Manage waste	•	Set standards, measures, and performance objectives
	•	Develop, analyze, decide on options		requirements, whatever you want to call them
	•	Implement		
	•	Verify results		
	•	Past Hanford practice is to talk implementation		